Case Report

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MECONIUM PERITONITIS - REPORT OF A RARE CASE

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ABSTRACT

Aim: To report on a rare case of meconium peritonitis (MP).

Case Report: We report a case of $G_2P_1L_1$ at 37 weeks of gestation, a post caesarean pregnancy with all prior normal ultrasound reports, came with complaints of decreased fetal movements. On ultrasound scan there was features suggestive of meconium peritonitis with small bowel perforation. She was delivered by emergency repeat caesarean section and the neonate underwent laparotomy on the first neonatal day.

Discussion: Meconium peritonitis is a rare condition diagnosed in antenatal period which has a high neonatal morbidity and mortality. Meconium peritonitis is an aseptic chemical peritonitis caused due to in-utero bowel perforation, most frequently secondary to obstruction, often diagnosed by routine fetal ultrasound.

Conclusion: Early diagnosis and treatment are the keys to successful management of MP.

Key Words: Meconium, Chemical peritonitis, Bowel perforation

INTRODUCTION

Bowel obstruction (like atresia, intussception, bands and meconium plug) may result in bowel perforation and cause meconium peritonitis (MP). It is a sterile chemical peritonitis caused in utero. Meconium leaks into abdominal cavity and causes secondary inflammatory reaction which results in 4 types of MP- Fibro adhesive, cystic, generalized or healed[1]. It is a rare condition with estimated incidence of 1:30,000 cases[2]. This can be diagnosed with routine prenatal ultrasound and have classic features of intra-abdominal calcification, ascites, intra-abdominal mass, bowel dilatation and polyhydramnios. It is difficult to prognosticate the outcome on the basis of the above findings. Most of the neonates require emergency laparotomy and some may need second laparotomy and rarely third laparotomy for anastomosis of the intestine[3]. The prenatally diagnosed MP causes overall morbidity of 22% and mortality of 11% and has better prognosis than postnatally diagnosed MP[4, 5].

CASE REPORT

A 24 years old $G_2P_1L_1$ post-caesarean pregnancypresented to our hospital, with an antenatal ultrasound at 37 weeks which was suggestive of small bowel perforation with meconium peritonitis (fig1). Although her previous ultrasound scans were normal, the presenting condition warranted an emergency repeat lower segment cesarean section in view of fetal distress. She delivered a 3 kg boy baby with gross abdominal distention (fig2) and mild respiratory distress. Following NICU admission, the baby was started on intravenous fluids and an ultrasound was done to confirm the diagnosis.

Baby was posted for emergency laparotomy (Fig 3, 4, 5) under general anesthesia. Following layered dissection, bowel distention with perforation in the distal ileum was noted and the caecum was filled with meconium. Meconium was drained and ileostomy was done. In view of poor general condition of the neonate due to severe peritonitis, colon was not explored and drain was placed. On day 2 there was meco-

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nium drained in the drainage tube and neonate was posted for second laparotomy and found to have perforation in transverse colon with meconium in entire segment. Excision of 2 cm bowel and end to end anastomosis was done. Multiple bowel biopsies were taken to look for ganglion cells and their presence in the histopathology report ruled out aganglinosis. Neonate was placed on ventilator support and inotropes. Later baby was supported with total parenteral nutrition and gradually feeding established with concomitant ileostomy care. Neonate was discharged on day 12 and was advised for review and follow up after 3 months.

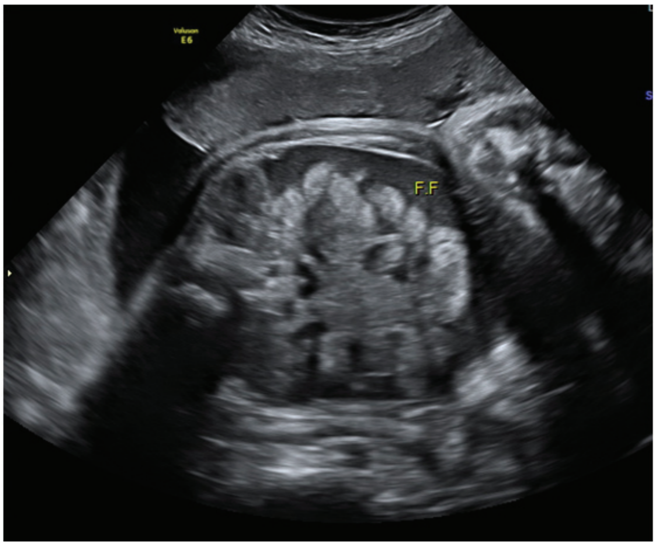


Figure 1: USG showing distended bowel loops with peritonitis



Figure 2: Fetus with abdominal distention



Figure 3: Small bowel perforation

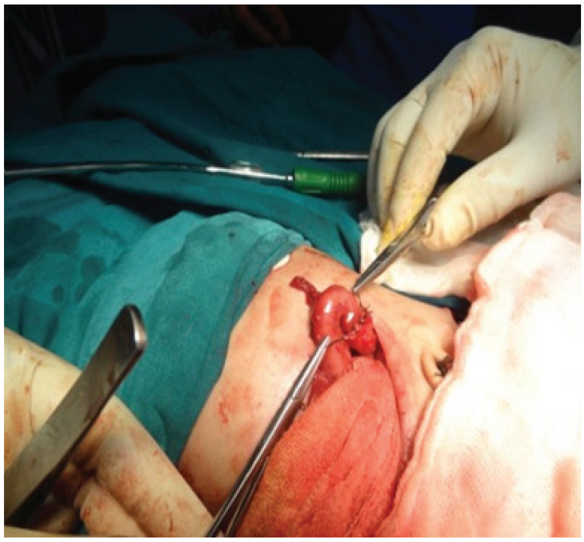


Figure 4: Resection and anastomosis



Figure 5: Ileostomy

DISCUSSION

Meconium peritonitis should be considered when hyper-echogenic areas are found in the fetal abdomen during II and III trimester scan[6]. Some of the common causes of obstruction which cause meconium peritonitis are atresia, volvulus, intussception, congenital bands, and meckel's diverticulum- all of which accounts for 50% incidence. Other causes of MP include viral infections caused by cytomegalovirus and parvo virus B19, meconium ileus(25%) and cystic fibrosis (7-40%)[7].

Bowel obstruction leads to perforation and causes meconium peritonitis which can be diagnosed by routine prenatal screening ultrasound. Some of the ultrasound features are ascites, polyhydramnios, dilated bowel loops, and intra-abdominal calcification. Some of the complications following MP are prematurity (20% to 30%) and polyhydramnios(10%- 20%)[8]. The prognosis depends on the etiology for bowel rupture.

If MP is diagnosed before 24 weeks of gestation cystic fibrosis should be ruled out by cordocentesis, chorionic villi sampling or amniocentesis. The definitive diagnosis is sweat chloride test in post natal period.

Termination of pregnancy is the first step in the management of MP followed by postnatal fetal x-ray and ultrasound to confirm the diagnosis. The fetus can also be delivered vaginally but due to the presence of massive ascites and abdominal distention, dystocia have been reported. However in progressive disease, delivery by caesarean section is the preferred option[9].

The neonate can be managed conservatively if there is no feature of bowel obstruction or peritonitis and the prognosis is good. In presence of bowel obstruction, surgery is the treatment of choice – drainage of the cyst/ascites, identifying the site of lesion and resection anastomosis with ileostomy care, which can be closed in later months.

In the reported case the neonate was managed by resection anastomosis with ileostomy care.

CONCLUSION

Meconium peritonitis is a rare condition; however it can be effectively diagnosed on routine prenatal ultrasound. Management requires a multidisciplinary approach with astute NICU care and meticulous follow up. Early identification and timely intervention significantly reduces the concomitant morbidity and mortality associated with the disease.

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